

DATA SHEET

DIESEL GENERATOR 1500KW

MODEL#FDK-M1875/H1

50HZ/1500RPM

MITSUBISHI MODEL: S16R-PTA-C



General Features:

- ◆ All qualified generator sets are subjected to a comprehensive performance test which includes 50% load, 70% load, 100% load, 110% load and to check, verify that all control systems, alarm and shut-down protection.
- ◆ Equipped with battery charger and 24V high performance maintenance-free lead-acid starting batteries and connecting cables.
- ◆ Stainless galvanized zinc plates with strong corrosion-proof.
- ◆ Vibration isolators between the engine/alternator and base frame.
- ◆ Equipped with industrial silencer and flexible exhaust hose.
- ◆ Designed to comply with ISO8528/GB2820.
- ◆ Powered by Mitsubishi engine and coupled with Stamford alternator.
- ◆ Water jacket preheater, oil heater and double air cleaner, etc. are available.

FDK Diesel Generator Set Data

Genset Model	FDK-MIT1540/H1
Prime Power	1370KW/1713KVA
Standby Power	1500KW/1875KVA
Output Frequency / Rated speed	50Hz/1500rpm
Rated Voltage	230V/400V

Engine Make	Mitsubishi China
Engine Model	S16R-PTA-C
Alternator model	Stamford PI734E
Control System	DSE7320
Phase	Three

(1) **Prime power:** The rating is available for an unlimited of annual operating hours in variable load applications, in accordance with ISO8528-1.A 10% overload is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO 3046-1.

(2) **Standby power:** The rating is applicable for supplying emergency power in variable load applications for up to 200 hours per year in accordance with ISO8528-1. Overload is not allowed.

(3) **Rated voltage:** available with customer requirement.

Engine Specifications (DETAILED in APPENDIX)

Engine Model	S16R-PTA-C
Engine Manufacturer	Mitsubishi China
Cylinder quantity	16
Cylinder Arrangement	V type
Cycle	Four stroke
Aspiration	Turbo charged

Bore x Stroke (mm x mm)	170×180
Displacement	65.37L
Compression Ratio	14:1
Prime power / Speed (KW/RPM)	1450/1500
Standby power/ Speed (KW/RPM)	1590/1500
Speed governor	Electronic



Piston Speed	9m/s
Maximum Regenerative Power	140kw
Total Lubrication System Capacity (L)	230
Coolant Capacity Engine Only (L)	170

Fuel Consumption at 100% load	N.A.
Starter motor	24V
Alternator	24V
Maximum Overspeed Capacity	2100RPM

Alternator Specifications

Alternator model	PI734E
Alternator manufacturer	STAMFORD
Exciter type	Single bearing, Brushless, Self-excited
Rated output prime power	1900 KVA
Rated speed	1500 rpm
Rated frequency	50Hz

Number of phase	3
Rated voltage	400V (Available with custom requirements)
Power factor	0.8
Voltage regulation NL-FL	≤±1%
Insulation grade	H
Protection grade	IP23

Alternator option: Leroy Somer, MECC, Marathon, Engga, Faraday

Control System DSE7320 (DETAILED in INSTRUCTION)

DSE7320 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, breaker control and automatically start the engine when the mains are abnormal. Accurately measure various operational parameters and display all values and alarms information on the LCD. In addition, the control module can automatically shut down the engine and indicate the engine failure.

FEATURES

- ♦ Microprocessor control, with high stability and credibility.
- ♦ Monitoring and measuring operational parameters of the mains supply and genset.
- ♦ Indicating operation status, fault conditions, all parameters and alarms.
- ♦ Multiple protections; multiple parameters display, like pressure, temp. etc.
- ♦ Manual, automatic and remote work mode selectable.
- ♦ Real time clock for time and date display, overall runtime display, 250 log entries.
- ♦ Overall power output display.
- ♦ Integral speed/frequency detecting, telling status of start, rated operation, overspeed etc.
- ♦ Communication with PC via RS485 OR RS232 interface, using MODBUS protocol.

Soundproof Enclosure Specification

FDK silent generator is designed by professional acoustic engineers based on years of experience. Now we can make the noise of the generator less than 80-85dB(A) at 1m, or 70-75dB(A) at 7m, 60-65dB(A) at 15m.

FEATURES

- ♦ Multi-way air intake and exhaust guarantee the power performance of the generator.
- ♦ Large-scale impedance combined type silencer effectively reduce noise of the generator.
- ♦ Internal high performance rubber damper and flexible materials reduce vibration.
- ♦ Base mounted fuel tank supports the generator running for 8 hours.

Optional



ISO9001:2008

FDK reserves the right to change the specifications and designs without notice.

Generator set	Alternator	Low environment Temp	ATS
<input type="checkbox"/> Open generator set <input type="checkbox"/> Silent generator set <input type="checkbox"/> Trailer generator set <input type="checkbox"/> ABB MCCB circuit breaker	<input type="checkbox"/> Stamford <input type="checkbox"/> Marathon <input type="checkbox"/> Mecc Alte <input type="checkbox"/> Leroy Somer <input type="checkbox"/> Farady <input type="checkbox"/> Engga	<input type="checkbox"/> Water heater <input type="checkbox"/> Oil heater <input type="checkbox"/> Battery heater	<input type="checkbox"/> CHINT <input type="checkbox"/> SCHNEIDER <input type="checkbox"/> ABB
Fuel system	Control system	Voltage	Synchronized system
<input type="checkbox"/> 12hrs base tank <input type="checkbox"/> 24hrs base tank <input type="checkbox"/> Dual wall base fuel tank <input type="checkbox"/> Outside fuel tank	<input type="checkbox"/> AMF function <input type="checkbox"/> ATS control cabinet <input type="checkbox"/> DSE7320 <input type="checkbox"/> DSE7510 <input type="checkbox"/> GU620A	<input type="checkbox"/> 415/240V <input type="checkbox"/> 400/230V <input type="checkbox"/> 380/220V <input type="checkbox"/> 220/127V <input type="checkbox"/> 200/115V	<input type="checkbox"/> CHINT Cabinet <input type="checkbox"/> SCHNEIDER Cabinet <input type="checkbox"/> DSE8610 Module <input type="checkbox"/> COMAQ Module <input type="checkbox"/> DEIF Module

Dimension & Weight

Open

Overall Size: L×W×H (mm)	6500×2150×3500
Weight (kg)	12000

Soundproof Version

Overall Size: L×W×H (mm)	40FT CONTAINER
Weight (kg)	22500

Sales Promises

- ◆ FDK provides a full line of brand new and high quality products. Each and every unit is strictly factory tested before shipment.
- ◆ Quality warranty is according to our standard conditions: 12 months from BL date or 1000 running hours, whichever comes first.
- ◆ Service and parts are available from FDK or distributors in your location.
- ◆ FDK guarantee use **BRAND NEW & GENUINE MACHINE.**



1. GENERAL

Object and use	:	Diesel generator
Color of painting	:	GB02(GSB05-1426-2001)
Applicable conditions		
Ambient temperature	:	5°C ~ 40°C
Altitude	:	1500m above sea level
Max ,humidity	:	85%
Place of installation	:	In door

Shop test

Diesel engine running tests shall be carried out by the following items.

Starting test

Load test	:	1/4, 2/4, 3/4 Load each
	:	4/4 Load

Governor test	:	Governor test should be done along with respective governor controller
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Safety stop device test

Standard

All items, unless otherwise specified, are in accordance with JIS, GB and manufacturer's standards.

2. PRINCIPAL PARTICULARS

Model	:	S16R-PTA-C
Type	:	4cycle stroke, water cooled diesel engine
Combustion chamber	:	Direct injection type
Aspiration	:	Turbocharged with after cooler
Number of cylinders	:	16-V
Bore × stroke	:	170mm × 180mm
Total displacement	:	65.37liter
Compression ratio	:	14.0 : 1
firing order	:	1 - 9 - 6 - 14 - 2 - 10 - 4 - 12 - 8 - 16 - 3 - 11 - 7 - 15 - 5 - 13
Direction of rotation	:	Counter clockwise as viewed from flywheel side
Engine dimensions (Approx.)	:	Length Apx. 3223mm
	:	width Apx. 1360mm
	:	Height Apx. 1810mm
Dry weight (Approx.)	:	6750kg (without accessories)
Fuel oil	:	ASTM D975 No. 2 - D or BS 2869 class A or GB 252-0
Lubricating oil	:	API service CF class or CH-4 class
Output at ISO 8528 standard air conditions (25°C, 100kPa, 30% Humid)		
Stand-by rating	:	1590kW/1500min ⁻¹
Prime rating	:	1450kW/1500min ⁻¹

3. STANDARD EQUIPMENTS

(1) power line system

Flywheel	:	DWG.NO.38F96-21001	SAE J620d 21in, except screw size
Flywheel housing	:	DWG.NO.38F96-21001	SAE J617c No.00, except screw size
Engine mounting	:	DWG.NO.38F96-14001	6 points mounting, C = 250mm
Torsional vibration damper	:	Viscous type × 2pcs	

(2) Air intake system

Air cleaner	:	DWG.NO.38F96-30301	4 pcs Paper element type with screen cap
Turbocharger	:	MITSUBISHI TD Type	Model : TD10L
Air cooler	:	Jacket water cooled type	Plated element type
Air heater	:	Not supply	

(3) Exhaust system

Exhaust manifold	:	Air cooled type with heat insulator	
Muffler	:	Not supply	
Flexible pipe	:	DWG.NO.S37-1090 loose supply	JIS 350A, L=335mm, weight 31.6kg
Companion flange	:	Not supply	
Breather	:	DWG.NO.38F96-43013	Up side direction type For blow - off to outside of engine room

(4) Lubricating system

Oil pump	:	Gear pump type
Capacity of oil pump	:	480L/min (at Engine Speed 1500min ⁻¹)
Lub. oil pressure	:	0.5~0.65 Mpa
Quantity of oil (Approx.)	:	Oil pan full level : 200 liter low level : 140 liter Others (filter etc.) : 30 liter Total : 230 liter
Lub. oil filter (Full flow)	:	DWG.NO.38F96-40001 Paper element cartridge type × 4pcs filter mesh : 20 μ with by - pass alarm switch
Lub. oil filter (By - pass flow)	:	DWG.NO.38F96-40001 Paper element cartridge type × 1pc filter mesh : 2 μ
Lub. oil cooler	:	Water cooled corrugated type with by - pass valve

(5) Cooling system

Water pump	:	Gear drive centrifugal type
Capacity of water pump	:	1650 L/min (at Engine Speed 1500min ⁻¹)
Thermostat	:	Wax pellet type × 4pcs Open at 71°C ~ 85°C
Fan	:	Pusher type steel fan 1530 diameter, Gear drive Fan speed ratio i = 0.568
Quantity of Coolant	:	Approx.170L (only Engine)

(6) Fuel system

Fuel inlet pipings	:	DWG.NO.38F96-62112 loose supply flexible hose (Rc 3/4 joint)
Fuel return pipings	:	DWG.NO.38F96-61312 loose supply flexible hose (Rc 3/4 joint)
Fuel overflow of Inj. Pump and fuel leak - off of Nozzle have to return to fuel tank		
Injection pump	:	Bosch type "PS8" without timer
Feed pump	:	Piston type with priming pump
Injection Nozzle	:	Hole type 0.325mm × 10 holes
Fuel filter	:	DWG, No.38F96-62002 Paper element cartridge type filter mesh : 5 μ

(7) Control system

Governor	: DWG.NO.38F96-63005 Electronic speed governor Speed droop : 0 ~ 5% adjustable
Actuator	: DWG.NO.S13-1761 Supply voltage : DC24V± 20% Current consumption At starting : 13A Normal operation : 0.5 ~ 2A Min. Supply voltage : DC16V50%ED
Controller	: DWG.NO.S13-1042 loose supply Model : XS-400B-03 (04410-33100) Supply voltage : DC24V± 20%
Potentiometer	: PM10kΩ, For low idling speed setting Not supply
Potentiometer	: PM10kΩ, For rated speed setting Not supply
Connector	: DWG.NO.S13-1022 loose supply From actuator to controller 5000mm length
Magnetic pick up	: DWG.NO.S13-2011 With connector
Cable	: DWG.NO.S13-2020 loose supply From magnetic pick up to controller 4300mm length

(8) Starting system

Starter switch	: with key, with heat position Not supply
Starting motor	: DWG.NO.38F96-66001 DC24V, 7.5KW × 2pcs Reduction type with safety relay with 2 poles connector (DWG.NO.S14-0320)

Safety relay	:	Not supply
		The following Starter Protection functions shall be provided by Customer.
		1) Function for concurrent engagement of the two Starter.
		2) Function for engagement operation again when engagement of pinion gear fails.
Current of starter	:	Rush 1250A Cranking 400A (Ambient temp : 5°C, Lub. oil : SAE No. 30)
Alternator	:	DWG.NO.S10-0540 DC24V, 30A, with voltage regulator with 2 poles connector (DWG.NO.S10-0550)
Recommended battery capacity	:	DC24V, 400AH Not supply
Battery switch	:	Not supply
(9) Stopping system	:	DWG.NO.38F96-87502
Automatic stop		Automatically shut - down by stop solenoid and electronic governor power off simultaneously
Stop solenoid	:	DWG.NO.S13-0282 Energized to run type DC24V, 30.7A(pull), 0.58A(hold)
Manual stop	:	By stop lever
(10) Safety device		
Alarm switches	:	DWG.NO.38F96-90207
Alarm and trip		
Low oil press. switch	:	DWG.NO.S11-0796 (04442-45400) Diaphragm type : 0.15 MPa switch on
High water temp. switch	:	DWG.NO.S11-0551 (04442-34500) Wax type : 98°C switch on
Alarm		
Oil filter alarm switch	:	DWG.NO.S11-1371 Piston type : 0.15 MPa switch on
Oil filter alarm lamp	:	Not supply
Air filter alarm indicator	:	DWG.NO.S11-0920 loose supply Mechanical type : 635mmH ₂ O switch on

(11) Instrument

Meter and sensor	:	DWG.NO.38F96-90119
Tachometer	:	Pulse type for engine speed With electrical hour meter Not supply
Magnetic pick up	:	DWG.NO.S13-2011 For tachometer, pin-joint type
Cable	:	For magnetic pick up, 4300mm length Not supply
Thermometer	:	Electrical type for jacket water and lub. oil temp. Not supply
Pressure gage	:	Electrical type for lub. oil press. Not supply With 2 poles connector (DWG.NO.S14-0330)
Thermometer	:	For exhaust gas temp. Not supply

(12) Others

Turning device	:	DWG.NO.38F96-71001 Gear type, for maintenance
Tools	:	Not supply

Declaration:

To maintain and optimize product performance and reliability, we will do some necessary change timely to product or parts in this specification without altering the basic parameters. If you need more information, please refer to our comp

4. ACCESSORIES (Loose supply parts)

NO.	PARTS NO.	PARTS NAME	Q' TY	DWG. NO.	
1	47220-43101	AIR CLEANER ASSY.	2	S35-0550	38F96-30301
2	47220-45302	AIR CLEANER ASSY.	2	S35-0550	
3	45686-76402	PIPE, AIR	4		
4	32330-09400	O-RING	8		
5	47220-31400	ELBOW, HOSE	2	S35-0720	
6	47220-30400	ELBOW, HOSE	2	S35-0701	
7	47520-71700	PIPE, AIR	2		
8	47520-71800	PIPE, AIR	2		
9	47220-30500	HOSE, RUBBER	4	S35-0711	
10	05317-52001	CLAMP	8		
11	47220-38300	BAND	8	S35-0600	
12	47220-32200	CAP, AIR CLEANER	4	S35-0660	
13	47920-12400	FLEXIBLE PIPE	1	S37-1090	38F96-43003
14	45955-22160	HOSE, VINYL	1		
15	05317-51001	CLAMP	4		
16	47510-59300	PIPE, BREATHER	1		38F96-61312
17	45950-51700	PIPE,FLEXIBLE	1		
18	45950-11300	CONNECTOR	1		38F96-62113
19	45950-51700	PIPE,FLEXIBLE	1		
20	45950-11300	CONNECTOR	1		38F96-63005
21	04410-33100	CONTROLLER	1	S13-1042	
22	04410-32902	CONNECTOR, ACTUATOR	1	S13-1022	
23	04410-43500	CABLE, PICK UP	1	S13-2020	for starter
24	F8665-02100	CONNECTOR	2	S14-0320	
25	32B90-00300	CONNECTOR	1	S10-0550	for alternator
26	MH052231	CONNECTOR	1	S14-0330	38F96-90119
27	47220-34401	INDICATOR	4	S11-0920	38F96-90207

5. DRAWINGS

NO.	DWG. NO.	DWG. NAME	REMARK
1	38F96-00212	ENGINE OUTLINE	
2	38F96-01001	JOINT DETAIL	
3	38F96-04028	WIRING DIAGRAM	
4	38F96-14001	MOUNTING DETAIL	
5	38F96-21001	FLYWHEEL & HOUSING DETAIL	
6	38F96-30301	AIR CLEANER	
7	38F96-40001	OIL FILTER	
8	38F96-43013	BREATHER	
9	38F96-61312	FUEL RETURN PIPING	
10	38F96-62002	FUEL FILTER	
11	38F96-62112	FUEL INLET PIPING	
12	38F96-63005	GOVERNOR	
13	38F96-66001	STARTING MOTOR	
14	38F96-71001	TURNING GEAR	
15	38F96-87502	STOP SYSTEM	
16	38F96-90119	METER & SENSOR	
17	38F96-90207	ALARM SWITCH	
18	S10-0540	ALTERNATOR	
19	S10-0550	CONNECTOR	
20	S11-0551	THERMO SWITCH	
21	S11-0796	PRESSURE SWITCH	
22	S11-0920	INDICATOR	
23	S11-1371	FILTER ALARM SWITCH	
24	S13-0282	SOLENOID	
25	S13-1022	CONNECTOR	
26	S13-1042	CONTROLLER	
27	S13-1761	ACTUATOR	
28	S13-2011	MAGNETIC PICK UP	
29	S13-2020	CABLE, PICK UP	
30	S14-0320	CONNECTOR	
31	S14-0330	CONNECTOR	

NO.	DWG. NO.	DWG. NAME	REMARK
32	S35-0550	AIR CLEANER ASSY.	
33	S35-0600	BAND	
34	S35-0660	CAP, INLET	
35	S35-0701	ELBOW,HOSE	
36	S35-0711	HOSE, RUBBER	
37	S35-0720	ELBOW,HOSE	
38	S35-0731	HOSE, RUBBER	
39	S35-0751	HOSE, AIR	
40	S37-1090	FLEXBLE PIPE	